

1. Analysis of an extract by chromatographic method revealed presence of phenyl prapanolamine. It is the metabolite of the following alkaloid:

- A. Ephedrine
- B. Pyrocatechin
- C. Aconitine
- D. Securin
- E. Reserpine

2. During local anaesthetization novocaine solution is usually compounded with solution of adrenaline hydrochloride. What is the purpose of this action?

- A. Vasoconstriction
- B. Vasodilatation
- C. Increase in smooth muscle tone
- D. Decrease in smooth muscle tone
- E. Algesia reduction

3. A 32-year-old patient takes anti-tuberculous drugs. Some time later he has noticed that his urine turned orange. What preparation is the most likely cause of this phenomenon?

- A. Rifampicin
- B. Isoniazid
- C. Pyrazinamide
- D. Ethambutol
- E. Streptomycin sulfate

4. 6 months after treatment a patient with coronary heart disease developed tolerance to the nitrates with prolonged action. What drug with nitrate-similar effect should be recommended in this case?

- A. Molsidomine
- B. Nifedipine
- C. Prasosine
- D. Verapamil
- E. Metoprolol

5. A 52-year-old patient was diagnosed with systemic amebiasis accompanied by bowels, liver and lungs affection. What preparation should be administered?

- A. Metronidazole
- B. Chiniofon
- C. Tetracycline
- D. Chingamin
- E. Phthalazol

6. A 33-year-old woman who has been treated for chronic polyarthritis for a long time complains about arterial pressure rise, change of adipose tissue distribution, menstrual cycle disorder. What preparati-

on has she taken?

- A. Prednisolone
- B. Indometacin
- C. Butadion
- D. Synflan
- E. Diclofenac sodium

7. A pharmacist made a tincture of althaea root. What is the proportion of herbal crude drug and extractant?

- A. 1:20
- B. 1:10
- C. 1:30
- D. 1:100
- E. 1:400

8. A pharmaceutical enterprise widely applies technical and technological media of information use in order to increase efficiency of managing productive and administrative activity of an organization, to enhance labour productivity, to improve methods of planning and regulating management processes. All this is realized by means of:

- A. Automated management system
- B. Automation equipped working place
- C. Automated instruction and control system
- D. Information-management system
- E. Automated data retrieval system

9. Marketing research of certain pharmaceutical groups involves collection and analysis of primary information. This is the following type of marketing research:

- A. Field research
- B. Armchair research
- C. Research of drug market
- D. Research of drug consumers
- E. Research of marketing network of pharmaceutical market

10. An analytical laboratory carries out quantitative analysis of sodium citrate by method of ion-exchanging chromatography on a cationite. What titrated solution is to be used for the following titration of generated citric acid?

- A. Sodium hydroxide
- B. Iodine
- C. Potassium iodate
- D. Hydrochloric acid
- E. Trilon B

11. A pharmacist prepared an oil

emulsion containing zinc oxide. Specify the rational method of substance incorporation:

- A. Suspension-type incorporation into the prepared emulsion
- B. Dissolution in oil
- C. Grinding with water for dilution of the primary emulsion
- D. Dissolution in water for preparation of the primary emulsion
- E. Dissolution in the finished emulsion

12. A pharmacist made a tincture of Adonis herb. A peculiarity of its preparation is that the active substances are derived in:

- A. In the neutral medium
- B. In the alkalescent medium
- C. In the alkaline medium
- D. In the subacid medium
- E. In the acid medium

13. Preparations made of ginseng roots have tonic and adaptogenic properties, improve mental and physical performance. If the ginseng tincture cannot be found in a pharmacy, it can be substituted by the analogous preparations made of the following raw material:

- A. *Radices Eleutherococci*
- B. *Radices Valerianae*
- C. *Radices Inulae*
- D. *Radices Ononidis*
- E. *Radices Rhei*

14. Balance is a part of financial accounting of pharmacies. What index is reflected in the assets of the balance sheet?

- A. Residual value of fixed assets
- B. Retail turnover
- C. Wholesale turnover
- D. Proceeds of a pharmacy
- E. Salary costs

15. The market is characterized by the following conditions: a big number of salespersons and customers who don't make any influence upon the level of current prices; availability of uniform and interchangeable competing products; lack of price restrictions. What type of market is it?

- A. Market of pure competition
- B. Market of monopolistic competition
- C. Oligopolistic market
- D. Market of pure monopoly
- E. -

16. If the internal surface of buckthorn rind is moistened with 5% alkaline solution, it becomes cherry-red colouring. This is the evidence of presence of the following substance:

- A. Anthracene derivatives
- B. Alkaloids
- C. Saponins
- D. Flavonoids
- E. Tannins

17. A pharmacy technologist received an ointment formulation:

Rp.: Unguentum Resorcini 1,5% - 10,0

Da. Signa.

To be applied on the affected skin areas.

The pharmacist incorporated dry medical substance into the ointment by the following way:

- A. Trituration with a few drops of vaseline oil
- B. Trituration with a few drops of ethyl alcohol
- C. Trituration with a few drops of water
- D. Adding to the fused vaseline
- E. Trituration with a part of vaseline

18. A pharmacy analyst can verify presence of iron cation (II) in a drug formulation by means of the following solution:

- A. Ammonium sulfide
- B. Sodium chloride
- C. Magnesium sulfate
- D. Potassium bromide
- E. Sodium phosphate

19. An advance holder (accountant) received money from the cash fund of an enterprise for purchase of office accessories. After the cash advance the advance holder must submit the statement of application of funds no later than:

- A. On the next working day
- B. In three working days
- C. In ten working days
- D. In a week
- E. There is no deadline

20. Choose an antiseptic from the group of halogen containing drugs that can be included into the first-aid kit for a child going to a summer camp:

- A. Alcoholic iodine solution
- B. Brilliant green solution
- C. Copper sulfate solution
- D. Methylene blue solution
- E. Formaldehyde solution

21. A pharmacy received a new-generation nonsteroid anti-inflammatory drug "meloxicam" that mainly blocks cyclooxygenase-2. What advantages does this preparation have in comparison with other nonsteroid anti-inflammatory drugs?

- A. Minimal side effect on alimentary tract
- B. Evident myospasmodic action
- C. Interferonogenic properties
- D. Minimal side effect on hematogenesis
- E. Significant inhibition of protease activity

22. Leaves of belladonna, henbane and datura containing tropane alkaloids must be stored according to the following list requirements:

- A. B list (these drug substances require caution in handling, storage or use)
- B. A list (poisonous drug substances)
- C. General sales list
- D. Essential oil materials list
- E. List of substances equivalent to narcotics

23. A patient suffering from essential hypertension has increased concentration of renin in blood plasma. Which pharmacological group should be preferred for this patient treatment?

- A. ACE inhibitors
- B. α -adrenoblockers
- C. Diuretics
- D. Blockers of calcium channels
- E. Sympatholytics

24. A patient suffering from stomach ulcer was prescribed almagel. Which of its pharmacological properties is intended for treatment of this pathology?

- A. HCl neutralization
- B. Local anaesthetization
- C. Blocking the H_2 -histamine receptors
- D. Blocking the muscarinic cholinergic receptors
- E. Anti-inflammatory action

25. One of the ways to derive essential oil is enfleurage, or maceration. Essential oil can be derived by enfleurage from the following herbal raw material:

- A. Petals of Damascus rose
- B. Lemon skin
- C. Coriander fruits
- D. Mint leaves
- E. Camomile flowers

26. A pharmacist and a pharmacy manager were involved into the labour dispute about carry over of vacation time. The pharmacist applied to the council of conciliation. The council should consider his application within the following period:

- A. 10 days
- B. 5 days
- C. 3 days
- D. 1 week
- E. 1 month

27. All the medications require special storage conditions according to their physical and physicochemical properties. Ampouled solution of sodium adenosine triphosphate (ATP) should be stored under the following temperature:

- A. $3 - 5^{\circ}C$
- B. $0 - 2^{\circ}C$
- C. $7 - 10^{\circ}C$
- D. $10^{\circ}C$
- E. $12 - 15^{\circ}C$

28. Quality control of tablets produced at a pharmaceutical enterprise involves quantitative determination of such subsidiary substances as talc and aerosil. What method is applied for such determination?

- A. Gravimetric
- B. Titrimetric
- C. Photocolorimetric
- D. Spectrophotometric
- E. Chromatographic

29. A 52-year-old patient had myocardial infarction and was discharged from the hospital after the stationary treatment. What daily dose of acetylsalicylic acid should be administered in order to prevent thrombosis?

- A. 100 mg
- B. 500 mg
- C. 1000 mg
- D. 200 mg
- E. 50 mg

30. An analyst of a pharmaceutical storehouse received the substance of hydrogen peroxide for analysis. Quantitative determination of this drug should be performed by permanganometric

method. According to the analytical normative document, titration should be carried out till the solution turns:

- A. Pink
- B. Green
- C. Yellow
- D. Dark blue
- E. Colourless

31. A patient suffering from ulcer disease was prescribed famotidine. What is the mechanism of its action?

- A. Block of H₂-histamine receptors
- B. Block of H₁-histamine receptors
- C. Block of muscarinic cholinoreceptors
- D. Inhibition of adenosine triphosphatase activity
- E. Block of cholinoreceptors of sympathetic ganglions

32. Ophthalmic drops are produced on the base of concentrated riboflavin solution (1:5000). How much solution should be taken if the formulation says "0,001 of riboflavin"?

- A. 5 ml
- B. 2 ml
- C. 3 ml
- D. 4 ml
- E. 1 ml

33. While producing phytopreparations and organotherapeutic preparations different kinds of dryers are used. What dryer would be the most effective for drying thermolabile compounds?

- A. Freeze-dryer
- B. Roller dryer
- C. Band dryer
- D. Drying oven
- E. Drum dryer

34. Choose an optimal antibacterial drug for the mycoplasmal pneumonia treatment:

- A. Rovamycin
- B. Gentamycin
- C. Penicillin
- D. Ampicillin
- E. Amoxyclav

35. An analytical laboratory received substance of citric acid for the analysis. According to the requirements of the Ukrainian State Pharmacopoeia, citric acid can be determined by method of:

- A. Alkalimetry
- B. Iodometry
- C. Acidimetry
- D. Bromatometry
- E. Iodochlorometry

36. According to the requirements of the Ukrainian State Pharmacopoeia, the amount of calcium gluconate can be determined by the chelatometric method. What solution should be used as a titrant?

- A. Sodium edetate
- B. Potassium permanganate
- C. Iodine monochloride
- D. Argentum nitrate
- E. Hydrochloric acid

37. Tannins have astringent effect and are used for treatment of colitis, enterocolitis, diarrhea. What herbal raw material contains a lot of tannins?

- A. *Fructus Myrtilli*
- B. *Fructus Sambucci nigri*
- C. *Fructus Ribes nigri*
- D. *Fructus Rhamni catharticae*
- E. *Fructus Frangulae*

38. Anthracene derivatives of emodine group exhibit purgative effect. What herbal raw material contains large quantity of anthracene derivatives of emodine group?

- A. Buckthorn fruits
- B. Elder fruits
- C. Currants fruits
- D. Bilberry fruits
- E. Alder buckthorn fruits

39. Codeine can be derived for medical purposes out of a plant alkaloid by means of semisynthetic method. Name this alkaloid:

- A. Morphine
- B. Papaverine
- C. Berberine
- D. Protopine
- E. Chelidonine

40. Theory of management currently marks out four the most important approaches to the management. Choose the approach that is **NOT USED** in the theory of management:

- A. Structural
- B. Process
- C. Systemic
- D. Situational
- E. Approach from the position of different schools identification

41. Therapeutic department of a municipal hospital purchases medical products in a pharmacy. The wares will be dispensed from the stores department on presentation of the following document:

- A. Delivery order
- B. Cash book
- C. Prescription register
- D. Inventory report
- E. Register of laboratory packing works

42. In order to determine the purity a drop of lavender essential oil was applied on a strip of filter paper and warmed up in the stream of warm air. Some time later the stain increased in diameter. What impurity substance was found in the lavender oil?

- A. Fatty or mineral oil
- B. Phenol
- C. Ethanol
- D. Acetone
- E. Diethyl ether

43. A doctor prescribed a patient 100 ml of tincture made out of 0,25 of *Herba Thermopsisidis*. How much dried concentrated extract of *Herba Thermopsisidis* should be weighed by a pharmacist?

- A. 0,25 g
- B. 0,5 g
- C. 0,3 g
- D. 0,2 g
- E. 0,1 g

44. A patient has ordered 50 g of zinc ointment. How much zinc and Vaseline should be weighed by a pharmacist?

- A. 5,0 g and 45,0 g
- B. 10,0 g and 40,0 g
- C. 2,5 g and 47,5 g
- D. 1,0 g and 49,0 g
- E. 0,5 g and 49,5 g

45. A patient got an injection of 0,25% novocaine solution for the purpose of anaesthetization. Suddenly the patient has presented with red spots, intense sweating, tachycardia, bronchospasm, edema of nasal mucous membrane. What is the cause of this complication?

- A. Immediate allergy
- B. Delayed allergy
- C. Local irritation
- D. Tachyphylaxis
- E. Abstinence syndrome

46. In Ukraine the out-patients are supplied with narcotic and psychotropic drugs only by prescription. Medicoprophylactic institutions receive prescription blanks (Form 3) from the following source:

- A. Pharmacy storehouse
- B. City's health department
- C. Wholesale companies
- D. Typography
- E. Pharmaceutical corporation

47. Injection solutions of salts derived from weak acids and strong bases require stabilization. What stabilizers are used for these solutions?

- A. 0,1 M solution of sodium hydroxide
- B. 0,1 M solution of perchloric acid
- C. Trilon B
- D. Ascorbic acid
- E. Butylhydroxytoluene

48. 100 ml of 0,9% sodium chloride solution were prepared according to the doctor's prescription. What sterilization schedule is required for this solution?

- A. 120°C - 8 minutes
- B. 120°C - 12 minutes
- C. 120°C - 15 minutes
- D. 180°C - 30 minutes
- E. 100°C - 15 minutes

49. During digitoxin therapy for chronic cardiac insufficiency, a patient developed signs of intoxication with this preparation. The patient was prescribed unithiol. What is the mechanism of unithiol action in case of intoxication with cardiac glycosides?

- A. Reduction of K^+Na^+ -adenosine triphosphatase
- B. Binding of calcium ions
- C. Increase of sodium concentration in the cardiomyocytes
- D. Increased potassium permeability in the cardiomyocytes
- E. Binding of glycoside into the complex compound

50. A pharmacy got a formulation of a mixture containing manzanita decoction and belladonna extract. What is the reason for incompatibility between these components?

- A. Precipitation
- B. Hydrolysis
- C. Oxidation-reduction processes
- D. Emission of gaseous substances
- E. Coagulation of colloid systems

51. The central district pharmacy functions in a district centre and supplies local population with drugs and medical products. What pharmaceutical institutions are allowed to settle accounts with the customers without a cash register by way of check issuing?

- A. Pharmacies, pharmaceutical outlets and kiosks
- B. Central district pharmacy
- C. Pharmaceutical outlet at a hospital
- D. Pharmaceutical kiosk at a market
- E. Pharmaceutical kiosk at a railway station

52. Method of gas-liquid chromatography is often applied for identification and quantitative determination of toxicologically meaningful substances. Substances can be placed into the chromatograph dispenser in the following aggregate states:

- A. Liquid and gaseous
- B. Liquid and solid
- C. Gaseous and solid
- D. Liquid
- E. Gaseous

53. Examination of a patient who has been treated for rheumatoid arthritis for a long time revealed hyperglycemia. It might have been caused by the following drug:

- A. Dexamethasone
- B. Diclofenac sodium
- C. Ibuprofen
- D. Delagil
- E. Levamisole

54. A pharmacist was preparing an ointment with ricin oil and Vaseline but failed to get homogenous system. What is the most likely cause of incompatibility between these components?

- A. Component immiscibility
- B. Restricted solubility
- C. Release of water of crystallization
- D. Coagulation
- E. Adsorption

55. A large and well-known company has granted a small independent firm the right to use its trademark and technology so that it could take advantage of authori-

ty and customer trust to the well-known brand. Such concept is called:

- A. Franchising
- B. Merchandising
- C. Use of dealer's brand
- D. Use of trademark
- E. Use of manufacturer's brand

56. A woman who has been treated for infiltrative focal tuberculosis for a long time complains of acute hearing impairment. Which of the following preparations might be the cause of such side effect?

- A. Streptomycin
- B. Isoniazid
- C. Ethambutol
- D. Rifampicin
- E. Ethionamide

57. A pharmacist revealed physical incompatibility caused by coagulation. This process takes place in a solution if the combination of the following substances is present:

- A. Dimedrol and collargol
- B. Dimedrol and novocaine
- C. Dimedrol and sodium chloride
- D. Dimedrol and diazoline
- E. Dimedrol and glucose

58. A pharmacist made a medicinal preparation according to the following formulation:

*Rp.: Chloroformii
Olei Helianthi
Methylis salicylatis ana 10,0
M.D.S. For infriction.*

Specify the kind of disperse system:

- A. Liniment - solution
- B. Liniment - combined
- C. Liniment - emulsion
- D. Liniment suspension
- E. Liniment - extractional

59. Aerosol composition includes active substances, solvents and propellents. Which of the following substances is used as propellent?

- A. Freon-11, carbon oxide, propane-butane
- B. Isopropyl myristate, neon, sulfur oxide
- C. Propylen glycol monostearate, argon, helium
- D. Linethol, myristic acid, benzocaine
- E. Hydrogen sulfide, hydrogen, triethanolamine

60. A department producing sterile

pharmaceutical forms needs a method of eye drops sterilization applicable for drugs derived from thermolabile substances. What is the optimal method of sterilization?

- A. Sterile filtration
- B. Thermal sterilization
- C. Addition of ascorbic acid
- D. Filling in the inert gas medium
- E. Use of polymeric packings

61. Accounting of pharmaceutical institutions includes control accounts of nine classes. What accounting units are represented in the accounts of the 4-6 classes?

- A. Liability
- B. Pharmacy assets
- C. Element costs
- D. Material costs
- E. Incomings and business results

62. A pharmacist revealed physical incompatibility in a recipe. Specify the combination of drug substances demonstrating eutectic when blended:

- A. Camphor and menthol
- B. Glucose and phenyl salicylate
- C. Streptocid and antipyrine
- D. Ascorbic acid and hydrocarbonate sodium
- E. Basic bismuth nitrate and magnesium oxide

63. What drug may cause constipation in a patient undergoing combined therapy for arterial hypertension?

- A. Verapamil
- B. Furosemide
- C. Trimetazidine
- D. Panangin
- E. Acetylsalicylic acid in small dosages

64. Management of a pharmaceutical company involves American and Japanese approaches. Choose a typical feature of American model of management:

- A. Quick evaluation and career development
- B. Group forms of control
- C. Corporate liability
- D. Slow career development
- E. Heightened attention to the human factor

65. Quantitative analysis of drugs containing primary aromatic amine can be performed by means of nitritometric

method. Which of the following preparations can be determined by the nitritometric method without preliminary acid hydrolysis?

- A. Sulfadimine
- B. Phthalazol
- C. Phthazin
- D. Paracetamol
- E. Soluble streptocid

66. When filling the "Inventory report", a pharmacy manager represented a number of business transactions in the receipts section of report. Such transactions include:

- A. Purchase of drugs and pharmaceutical merchandise
- B. Total of realized trade mark-up
- C. Products consumption for business needs
- D. Total of sale
- E. Markdown on account of laboratory packing works

67. A patient suffering from neurosis accompanied by anxiety and fear development was prescribed diazepam. What pharmacological effect makes it possible to apply the drug for this disease treatment?

- A. Anxiolytic
- B. Antiarrhythmic
- C. Anti-inflammatory
- D. Hypotensive
- E. Antianginal

68. A hospital admitted a child with signs of poisoning with belladonna alkaloids. What drug should be applied as an antidote?

- A. Proserin
- B. Magnesium sulfate
- C. Sodium caffeine benzoate
- D. Paracetamol
- E. Sodium valproate

69. You are employed in a pharmaceutical storehouse. When adding newly received preparations to the computerized database, specify the pharmacological group of paracetamol:

- A. Nonnarcotic analgetic
- B. Hypnotic
- C. Diuretic
- D. Hypotensive drug
- E. Antianginal drug

70. A 34-year-old patient suffering from

bronchitis was prescribed an antitussive drug of central action. What drug is it?

- A. Glaucine
- B. Corglycon
- C. Enalapril
- D. Furosemide
- E. Fercoven

71. Continuous taking of a drug results in reduction of its efficiency. This phenomenon is called:

- A. Habituation
- B. Sensibilization
- C. Cumulation
- D. Dependence
- E. Tachyphylaxis

72. A patient was warned that taking the prescribed preparation might cause cough. What drug is it?

- A. Lisinopril
- B. Clonidine
- C. Phenihidine
- D. Dichlothiazide
- E. Metoprolol

73. A pharmacist with over 8 years of service got a medical certificate in accordance with the established procedure. What is the size of temporary disability allowance the pharmacist is entitled to?

- A. 100% of average salary
- B. 90% of average salary
- C. 80% of average salary
- D. 60% of average salary
- E. 50% of average salary

74. A pharmacy functions on the base of collective financial liability. The financial liability agreement may be re-executed in the following case:

- A. Dismissal of over 50% of staff
- B. Dismissal of one staff member
- C. Dismissal of 5% of staff
- D. Dismissal of 10% of staff
- E. Employment of new employees

75. A pharmacy sells drugs by retail. Omnopon relates to the following group of controlled drugs:

- A. Narcotic
- B. Psychotropic
- C. Toxic
- D. Potent
- E. General sale list

76. A pharmaceutical company

"Pharmasvet" has patented and produces now a new hypoglycemic preparation. The company markets this product directly through the own marketing departments, affiliated marketing companies, pharmacy network. Marketing policy of this pharmaceutical company can be characterized by the channel of the following level:

- A. Zero level
- B. One-level
- C. Two-level
- D. Three-level
- E. Four-level

77. A patient with acute cardiac insufficiency and cardiac glycoside intolerance got an injection of dobutamine. What is the mechanism of its action?

- A. Stimulation of β_1 -adrenoreceptors
- B. Stimulation of α_1 -adrenoreceptors
- C. Block of K^+ -, Na^+ -adenosine triphosphatase
- D. Inhibition of phosphodiesterase activity
- E. Stimulation of muscarinic cholinoreceptors

78. A patient suffering from chronic cardiac insufficiency was prescribed a cardiac glycoside from the foxglove (*Digitalis*) group. What drug is it?

- A. Digoxin
- B. Strophanthine
- C. Corvalol
- D. Corglycon
- E. Cordiamin

79. One of the methods of quantitative analysis of active substances in the raw material is the biological standardization. It can be applied with the following group of biologically active substances:

- A. Cardiac glycosides
- B. Alkaloids
- C. Fatty oils
- D. Tannins
- E. Mucilages

80. Lipophilic bases for suppositories include:

- A. Mixtures of hydrogenated fats
- B. Polyethylene oxide base
- C. Gelatin-glycerol base
- D. Collagen base
- E. Glycerol soap base

81. An expert of an analytical laboratory is determining Nitrofural. What quanti-

tative titrimetric method can be applied?

- A. Iodometry
- B. Permanganometry
- C. Alkalimetry
- D. Argentometry
- E. Nitritometry

82. A 52-year-old patient complains of having increased arterial pressure for a month. She has a 5-year history of bronchial asthma. What group of hypotensive drugs should **NOT** be recommended this patient?

- A. β -adrenoreceptor blockers
- B. Calcium channel blockers
- C. Tranquilizers
- D. Angiotensin receptor blockers
- E. Diuretics

83. A pharmacy analyst is determining one of the following drugs by the nintrietometric method. What drug is it?

- A. Norsulfazole
- B. Ftivazide
- C. Analgin
- D. Ammonium chloride
- E. Atropine sulfate

84. A chemotoxicological laboratory received a biological material. A toxicologist carries out uncontrollable analysis aimed at detection of the following group of toxic substances:

- A. Volatile toxins
- B. Medical use toxins
- C. Metal toxins
- D. Pesticides
- E. Mineral acids, alkali, inorganic salts

85. Quality of injection solutions supplied in ampoules can be assessed according to different indices. How many ampoules should be checked while determining quality of sealing (leaktightness of an ampoule)?

- A. 100%
- B. 97%
- C. 80%
- D. 75%
- E. 50%

86. A chemical department produces alcohol solution of boric acid. What filters are used for filtration of this solution?

- A. Pressure filters
- B. Paper filter
- C. Nutsch filter
- D. Bag filter
- E. Membrane filter

87. An 18-year-old patient was diagnosed with disseminated pulmonary tuberculosis. What drug will provide etiotropic pharmacotherapy?

- A. Isoniazid
- B. Benzylpenicillin sodium salt
- C. Trimethoprim
- D. Lincomycin
- E. Metronidazole

88. At the end of each month accountant of a pharmacy calculates amount of realized price markup. Which index **IS NOT USED** for such calculation?

- A. Total of cash in vault
- B. Total value of received goods in retail and wholesale prices
- C. In-stock balance at the beginning of month in retail prices
- D. In-stock balance at the beginning of month in wholesale prices
- E. Total sales proceeds

89. Suspensions as heterogenous systems can be characterized by kinetic and sedimentary instability. What substance is used for increasing suspension stability with hydrophobic substances?

- A. Gelatose
- B. Sodium chloride
- C. Boric acid
- D. Sodium sulfate
- E. Glucose

90. A pharmacy analyst is determining adrenaline tartrate by method of acid-base titration in the anhydrous solvents. What indicator is to be used according to the requirements of the Ukrainian State Pharmacopoeia?

- A. Crystal violet
- B. Methyl orange
- C. Phenolphthalein
- D. Thymolphthalein
- E. Eriochrome black

91. A patient has accidentally taken a barium-containing salt. All of the following salts have toxic effect upon the human organism **EXCEPT** for:

- A. Barium sulfate
- B. Barium carbonate
- C. Barium nitrate
- D. Barium acetate
- E. Barium chloride

92. A mineralizate under examination contains precipitates of barium sulfate and plumbum sulfate. These salts can be separated by means of:

- A. Solution of ammonium acetate
- B. Sulfuric acid
- C. Acetic acid
- D. Solution of sodium acetate
- E. Solution of ammonium nitrate

93. A pharmaceutical company "Adonis" promotes its new products by means of advertisement that informs the customers about the product, highlights its advantages, typical features and properties. What kind of advertisement is it?

- A. Informational
- B. Aggressive
- C. Sustaining
- D. Indirect
- E. Direct

94. The founders are going to open a retail pharmacy. What way of business running is stipulated in this case?

- A. Licence-based
- B. Normative
- C. Free
- D. Limited
- E. Without preliminary licencing or registration

95. While preparing decoctions in volume from 1000 to 3000 ml time of processing in boiling water bath should be:

- A. 40 minutes
- B. 25 minutes
- C. 30 minutes
- D. 45 minutes
- E. 15 minutes

96. A pharmacy analyst is measuring a drug by method of indirect bromatometry. Which of the following titrated solutions is to be used?

- A. Sodium thiosulfate
- B. Potassium bromate
- C. Sodium edetate
- D. Sodium nitrite
- E. Argentum nitrate

97. An expert of an analytical laboratory

is determining Ca^{2+} in the substance of calcium pantothenate. Specify the method of analysis:

- A. Chelatometry
- B. Nitritometry
- C. Argentometry
- D. Permanganometry
- E. Iodometry

98. Styles of maize with stigmata containing fatty acids, vitamins, essential oils, saponins and other substances are used as:

- A. Diuretic and choleric drug
- B. Expectorant and antitussive drug
- C. Bactericidal and astringent drug
- D. Sedative and anticonvulsive drug
- E. Cardiotonic and antiarrhythmic drug

99. Toxic substances can be isolated from the objects of biological origin by different methods. In case of poisoning with pesticides - derivatives of phosphoric acids - the following method is applied:

- A. Infusion with organic solvents
- B. Distillation with water steam from the alkaline medium
- C. Infusion with alkalized water
- D. Infusion with water acidified with chloric acid
- E. Dialysis aout of alkalized solutions

100. Dispersion degree of drug substances is of great importance for the preparation of ophtalmic ointments. What drug substance should be thoroughly triturated with sterile vaseline oil before incorporating it into the pharmacopoeia-recommended ointment base?

- A. Mercuric oxide yellow
- B. Resorcin
- C. Pilocarpine hydrochloride
- D. Zinc sulfate
- E. Ethyl morphine hydrochloride

101. Financial accountability of pharmacists consists of separate account forms. Which form presents accounts payable for the goods purchased?

- A. Balance sheet, form 1
- B. Financial performance report, form 2
- C. Financial performance report, form 2m
- D. Net worth statement, form 3
- E. Balance assets, form 1

102. In Ukraine natural persons and small business entities are allowed to use the simplified tax system. What limit on the number of employees is established for

such enterprises?

- A. No more than 10 persons
- B. No more than 20 persons
- C. No more than 30 persons
- D. No more than 40 persons
- E. No more than 50 persons

103. Fatty oil containing saturated fatty acids is used for atherosclerosis prevention. Specify the medicinal plant that is used for oil production:

- A. Flax seeds
- B. Fennelflower seeds
- C. Dill seeds
- D. Black chokeberry fruits
- E. Hawthorn fruits

104. A department of a pharmaceutical plant produces injection solutions. Ascorbic acid solution for injections relates to the following group of solutions:

- A. Easily oxidized solutions
- B. Solutions of substances that should be subjected to thermal sterilization
- C. Solutions of salts derived from weak bases and strong acids
- D. Solutions of salts derived from strong bases and weak acids
- E. Solutions of substances requiring special rectification

105. A phytochemical department of a pharmaceutical factory produces biogenic stimulators out of different raw materials. Specify the plant-derived biogenic stimulators:

- A. Liquid extract of aloe, aloe liniment, aloe juice, biosedum
- B. Liquid extract of aloe, peloidinum, biosedum juice
- C. Peloidinum, humisolum, torfotum, Fibs pro injectionibus
- D. Vitreous body, Suspesio Placetae pro injectionibus, aloe juice, biosedum
- E. Peloidinum, humisolum, torfotum, plasmol, solcoseryl

106. A pharmacist has prepared an ointment intended for application on the open wound surface. Such kind of ointment should meet the following additional requirement:

- A. Sterility
- B. Isotonicity
- C. Isoviscosity
- D. Isoionicity
- E. Prolonged action

107. Powders represent an important group among the extemporal medicinal preparations. Which of the following components can be incorporated into a powder without preliminary grinding?

- A. Basic bismuth nitrate
- B. Ascorbic acid
- C. Camphor
- D. Xeroform
- E. Calcium gluconate

108. Medications in the storing rooms of a medicoprophyllactic institution should be placed on the shelves, in the cases, refrigerators or on the pallets or rickers. Toxic medications should be kept in:

- A. In a locked metal case
- B. In a safe
- C. In a wooden case
- D. In a refrigerator
- E. In the internal safe partition

109. A storehouse received a batch of althaea roots. For its verification a drop of ammonia solution was applied upon the root section; the spot of section turned yellow. This is the evidence of presence of the following substance:

- A. Mucilages
- B. Tannins
- C. Gum
- D. Pectins
- E. Vitamin C

110. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining procaine hydrochloride by nitritometric method. What indicator should be used for this purpose?

- A. Neutral red
- B. Methyl red
- C. Crystal violet
- D. Xylenol orange
- E. Acid chrome blue

111. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining fluorouracil by method of nonaqueous titration. What titrated solution is to be used?

- A. Tetrabutyl ammonium hydroxide
- B. Sodium nitrite
- C. Potassium bromate
- D. Ammonium thiocyanate
- E. Sodium edetate

112. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining calcium gluconate by method of complexometric titration. What indicator is to be used?

- A. Calconcarbon acid
- B. Methyl red
- C. Crystal violet
- D. Thymolphthalein
- E. Tropeolin 00

113. According to the requirements of the Ukrainian State Pharmacopoeia, a certain drug is being measured by method of chelatometric titration. What drug is it?

- A. Calcium chloride
- B. Potassium citrate
- C. Potassium chloride
- D. Sodium benzoate
- E. Sodium thiosulfate

114. An analytical laboratory carries out an analysis of ferrum sulphate heptohydrate according to the requirements of the Ukrainian State Pharmacopoeia. The test portion of the substance should be titrated with the following solution:

- A. Ammonium cerium sulfate
- B. Argentum nitrate
- C. Ammonium thiocyanate
- D. Sodium edetate
- E. Potassium bromate

115. A patient suffering from arterial hypertension and chronic bronchitis suddenly presented with dry cough and dyspnea. Body temperature remained unchanged. It is known that the patient takes captopril. These symptoms can be explained by increased generation of:

- A. Bradyquinine
- B. Angiotensin-1
- C. Renin
- D. Aldosterone
- E. Natriuretic peptide

116. A man came to a pharmacy and asked to recommend him a drug for treatment of allergic rhinitis that occurs in the period of linden flowering. What drug may be applied?

- A. Loratadine
- B. Adrenaline
- C. Anapriline
- D. Ambroxol
- E. Losartan

117. During the sensitivity test for benzylpenicillin a patient developed anaphylactic shock. The following preparation must be injected around the spot of antibiotic injection:

- A. Adrenaline hydrochloride
- B. Noradrenaline hydrotartrate
- C. Atropine sulfate
- D. Propranolol
- E. Ceftriaxon

118. A pharmacist is preparing powders by the way of triturating one of the components with ethyl alcohol. Such technology of preparation is typical for the following substance:

- A. Streptocid
- B. Starch
- C. Talc
- D. Zinc oxide
- E. Bolus alba

119. An accountant is calculating financial performance of a pharmacy. What item will be represented in the liabilities of the accounting report 791 called "Operational result"?

- A. Net profit (sales proceeds)
- B. Cost of goods sold
- C. Administration expenses
- D. Sales expenses
- E. Profits tax

120. The equity capital of a pharmacy is 7500 UAH, the liabilities make 2500 UAH. According to the formula of balance calculation given in the Statement of Standard Accounting Practice 2 the amount of pharmacy assets will be as follows:

- A. 10 000 UAH
- B. 4 000 UAH
- C. 7 500 UAH
- D. 2 500 UAH
- E. 12 000 UAH

121. Novocaine metabolism in the organism results in generation of p-amino-benzoic acid. What metabolic process underlies this conversion?

- A. Hydrolysis
- B. Dealkylation
- C. Oxidation
- D. Reduction
- E. Conjugation

122. A patient got poisoned with nitrites. Nitrite detection by means of azo dye

reaction involves using such acid:

- A. Sulfanilic
- B. Sulfuric
- C. Phosphoric
- D. Hydrochloric
- E. Salicylic

123. Fruits of holy thistle (*Silybum*) are used for production of a number of domestic and foreign hepatoprotective drugs. Factor of merit of this raw material is content of:

- A. Flavolignans
- B. Coumarins
- C. Alkaloids
- D. Vitamins
- E. Terpenoids

124. According to the pharmacopoeia requirements of liquid extract production, the extractant and the raw material should be taken in the following proportion:

- A. 1:1
- B. 1:3
- C. 1:5
- D. 1:10
- E. 1:4

125. A pharmacy got an order for powders containing ascorbic acid and sodium hydrocarbonate. What process takes place between the ingredients?

- A. Dampening
- B. Oxidation
- C. Adsorption
- D. Precipitation
- E. Stratification

126. An analyst is measuring sodium benzoate in the anhydrous medium by the acidimetric method according to the requirements of the Ukrainian State Pharmacopoeia. What reagent had to be used as a solvent?

- A. Anhydrous acetic acid
- B. Pyridine
- C. Water
- D. Dimethyl formamide
- E. Methanol

127. A pharmacy analyst is measuring mercury dichloride by method of indirect chelatometry. Excess of titrated solution of sodium edetate can be titrated by means of the following titrated solution:

- A. Zinc sulfate
- B. Sodium hydroxide
- C. Sodium thiosulfate
- D. Potassium bromate
- E. Sodium methylate

128. Calcium lactate can be quantitatively determined by chelatometric method. According to the Ukrainian State Pharmacopoeia, the following substance should be used as indicator:

- A. Calconcarbon acid
- B. Diphenylcarbazone
- C. Naphthol benzein
- D. Phenolphthalein
- E. Tropeolin 00

129. A pharmacy analyst of an analytical laboratory is studying procaine hydrochloride according to the requirements of the Ukrainian State Pharmacopoeia. What method is recommended by the Ukrainian State Pharmacopoeia for the quantitative analysis of this preparation?

- A. Nitritometry
- B. Bromatometry
- C. Acidimetry
- D. Alkalimetry
- E. Chelatometry

130. A pharmacy got the following recipe:
Rp.: Mucilaginis Amyli 50,0

Da. Signa. For the enema purposes.

How much starch and distilled water did the pharmacist use in order to make this preparation?

- A. 1,0 g of starch; 49 ml of distilled water
- B. 1,0 g of starch; 50 ml of distilled water
- C. 2,0 g of starch; 48 ml of distilled water
- D. 5,0 g of starch; 45 ml of distilled water
- E. 10,0 g of starch; 40 ml of distilled water

131. Aerosol production involves usage of propellants relating to different groups. Choose the propellants that relate to the group of volatile organic solvents:

- A. Methylene chloride, ethylene chloride
- B. Freons
- C. Propane, butane, isobutane
- D. Vinyl chloride and methyl chloride
- E. Carbon dioxide

132. Which preparation from the group of laxative agents **IS NOT** to be administered in case of intoxication with CNS-inhibiting substances?

- A. Magnesium sulfate
- B. Sodium sulfate
- C. Vaseline oil
- D. Bisacodyl
- E. Guttalax

133. A patient with bronchial asthma was prescribed salbutamol that has led to relief of bronchospasm symptoms. This is associated with stimulation of:

- A. β_2 -adrenoreceptors
- B. α_1 -adrenoreceptors
- C. Muscarinic cholinoreceptors
- D. Acetylcholine synthesis
- E. β_1 -adrenoreceptors

134. A pharmacy analyst is going to take a part of his holiday in spring and a part in summer. Holiday dividing is allowed provided that its main part will be no less than:

- A. 14 days
- B. 10 days
- C. 12 days
- D. 16 days
- E. 18 days

135. TV periodically conducts campaigns for young people aimed at popularization of mechanical contraceptives (not indicating concrete trademarks). Such actions are a kind of the following marketing communication:

- A. Publicity
- B. Advertising
- C. Personal sale
- D. Sale promotion
- E. Sponsorship

136. A biennial or perennial plant from the Apiaceae family has a blue-grey stem branching in its lower part. Its leaves are also blue-grey, finely dissected, with the ultimate filiform segments. The flowers are yellow, in compound umbels. Its fruit is used for production of "dill water". What plant is it?

- A. *Foeniculum vulgare*
- B. *Carum carvi*
- C. *Petroselinum crispum*
- D. *Coriandrum sativum*
- E. *Conium maculatum*

137. Water for injections is derived from the drinking or distilled water. It can be either used freshly made or stored under the required temperature conditions. Water for injections is produced in the following premises:

- A. In a separate room of aseptic department
- B. In the assistant room
- C. In the washing room
- D. In the prescription department
- E. In the sales area

138. Department of finished drug products of the pharmacy №1 got a prescription for nasal drops "Farmazolin" intended for a 2,8-year-old child. This drug will be dispensed at the following price:

- A. At no cost
- B. 50% of price
- C. Full price
- D. 30% of price
- E. 70% of price

139. On the base of licorice root different drug dosage forms are produced, notably tablets, powders, syrups, teas. The only unused form is injection solution. Licorice roots exhibit haemolytic properties since they contain the following active substances:

- A. Saponins
- B. Alkaloids
- C. Essential oils
- D. Iridoids
- E. Polysaccharides

140. A pharmaceutical factory produces camphor oil for topical application. What oil is to be used as a solvent?

- A. Sunflower seed
- B. Peach
- C. Vaseline
- D. Olive
- E. Plum

141. A pharmaceutical enterprise produces ointments. What base is applied for production of sulfur ointment simple?

- A. Emulsion
- B. Vaseline
- C. Base "For ophthalmic ointments"
- D. Lanolin
- E. Polyethylene glycol

142. One of the accounting documents of a pharmacy is the balance sheet (Form 1) consisting of assets and liabilities. Name the elements of the asset of a pharmacy:

- A. Circulating assets and non-current assets
- B. Owned and borrowed assets
- C. Circulating assets and owned capital
- D. Non-current and borrowed assets
- E. Circulating and borrowed assets

143. A 46-year-old patient suffering from chronic bronchitis came to a pharmacy. What expectorative drug may be recommended?

- A. Ambroxol
- B. Falimint
- C. Libexin
- D. Glauvent
- E. Salbutamol

144. A 26-year-old pregnant woman (III trimester of pregnancy) complains about body temperature rise up to 39°C . What febrifuge may be recommended in this case?

- A. Paracetamol
- B. Aspirin
- C. Diclofenac
- D. Analgin
- E. Indometacin

145. Forensic toxicological analysis is often done for the metabolism products of toxic substances. Amino benzophenones are generated during biotransformation of:

- A. 1,4-benzodiazepines
- B. Phenothiazines
- C. Barbiturates
- D. Butyrophenones
- E. Opiates

146. A 48-year-old patient was given an intravenous injection of prednisolone in order to arrest a severe attack of bronchial asthma. Prednisolone relates to the following group of hormonal drugs:

- A. Glucocorticoids
- B. Gestagenic drugs
- C. Estrogens
- D. Mineral corticoids
- E. Anabolic steroids

147. A patient who has been taking phenazepam for a month came to a pharmacy. He insisted on buying another two packs of this drug. According to the patient, he feels unwell without phenazepam. What is the mechanism of the developed side effect?

- A. Drug dependence
- B. Idiosyncrasy
- C. Aftereffect syndrome
- D. Cumulation
- E. Addiction

148. A patient suffering from allergic rhinitis was prescribed ephedrine in form of nasal drops. The patient has significantly benefited from nasal instillation, and this stimulated him to use the drug every 2 hours. But under these conditions the drug appeared to be ineffective. What is the most likely cause of this phenomenon?

- A. Tachyphylaxis
- B. Drug dependence
- C. Idiosyncrasy
- D. Allergy
- E. Cumulation

149. Adjuvant substances in the production of tablets give the tableted mass all necessary technological properties, ensure dosage precision, mechanical strength and stability of tablets during their storage. What adjuvant substances facilitate disintegration or solution of the tablets in the organism?

- A. Disintegrants
- B. Antifriction agents
- C. Lubricants
- D. Filling agents
- E. Flavors

150. In case of loss of license a pharmacist should address an application for a duplicate to a licensing authority. The licensing authority is obliged to issue the duplicate to the applicant no later than in:

- A. Three working days after application receipt
- B. One month after application receipt
- C. Two months after application receipt
- D. Three months after application receipt
- E. The duplicate is not to be issued

151. Determination of pH of a biological material by means of indicator paper is applied for the preliminary conclusion about substances that might have caused intoxication. The indicator paper moistened with plumbum acetate solution was exposed to the evaporations of the material under examination and turned black. This indicates that the material under examination contains:

- A. Hydrogen sulfide
- B. Ammonia
- C. Methane
- D. Carbon monoxide
- E. Carbonic gas

152. Lapkina-Lazarenko method of ethylene glycol separation enables to isolate it effectively from the objects of chemotoxicological analysis. What is the selective transporter of ethylene glycol from the objects to the distillate?

- A. Benzol
- B. Water
- C. Ethyl alcohol
- D. Chloroform
- E. Acetone

153. Tincture of what medicinal plant can be applied as a tonic?

- A. *Rhodiola rosea*
- B. *Achillea millefolium*
- C. *Orthosiphon stamineus*
- D. *Digitalis purpurea*
- E. *Robinia pseudacacia*

154. Theobromine and theophylline can be determined by alkalimetric method according to the substituent. What acid is to be titrated with sodium hydroxide?

- A. Nitric
- B. Hydrochloric
- C. Sulfuric
- D. Acetic
- E. Phosphoric

155. Calculate the quantity of dried belladonna extract (1:2) required for preparing the following drug formulation:

Extracti Belladonnae 0,015
Magnesii oxydi 0,5
Natrii hydrocarbonatis 0,2
Misce ut fiat pulvis Da tales doses №10
Signa. 1 powder thrice a day.

- A. 0,3
- B. 0,15
- C. 0,4
- D. 0,6
- E. 0,015

156. A 25-year-old patient has been taking antibiotics for 7 days. Antibiotic therapy has caused a complication in form of bowel dysbacteriosis. This complication should be treated with drugs of the following pharmacological group:

- A. Probiotics
- B. Spasmolytics
- C. Cholagogic
- D. Antacids
- E. Adaptogens

157. A 57-year-old female patient was diagnosed with rheumatoid arthritis; she has also a history of stomach ulcer. What drug from the group of nonsteroid anti-inflammatory drugs may be recommended this patient?

- A. Celecoxib
- B. Diclofenac
- C. Aspirin
- D. Indometacin
- E. Mefenamic acid

158. Aerosol department of a pharmaceutical factory uses condensed gases in the capacity of propellants. Which of the following substances relates to the group of condensed gases?

- A. Freon
- B. Nitrogen
- C. Nitrous oxide
- D. Methylene chloride
- E. Ethylene chloride

159. An internship doctor prescribed his patient nifuroxazid from the group of nitrofurans for treatment of urinary tracts infection. The doctor made a mistake because:

- A. It cannot be absorbed from the digestive tract
- B. It is excreted with urine in the inactive state
- C. It has nephrotoxic effect
- D. It has bacteriostatic effect
- E. It is excreted from the organism very slowly

160. A pharmacist is preparing an ointment under aseptic conditions on the sterile ointment base - composition of vaseline and lanoline with the ratio 6:4. The drug substance is incorporated by suspension type. Such technology of ointment preparation is typical for the following substance:

- A. Benzylpenicillin sodium
- B. Sodium chloride
- C. Thiamine chloride
- D. Pilocarpine hydrochloride
- E. Sodium sulfate

161. A business entity carrying on the wholesale trade of drugs must be keepi-

ng documents concerning purchase and sale for a certain period. Specify this period:

- A. No less than three years
- B. No less than one year
- C. No less than two years
- D. No less than five years
- E. No less than ten years

162. This substance is of blue colour but unlike the colouring substances it doesn't leave any stain. The powders prepared out of it are made according to the general rules. What substance is it?

- A. Copper sulfate
- B. Ethacridine lactate
- C. Riboflavin
- D. Acrichine
- E. Furacilin

163. A pharmacist brews an aqueous extract out of medicinal raw material in the tightly closed infusion vessel for 15 minutes and stirs it without opening the lid. Such technology of infusion preparation is typical for the following medicinal raw material:

- A. Mint leaves
- B. Bilberry leaves
- C. Senna leaves
- D. Manzanita leaves
- E. Cowberry leaves

164. A pharmacist made 10 powders containing atropine sulfate at a rate of 0,00005 pro dose. What trituration did he use?

- A. 1:100
- B. 1:10
- C. 1:1000
- D. 1:50
- E. 1:20

165. Public health services attach great importance to the drug quality, that's why a pharmaceutical enterprise has concentrated its efforts upon the improvement of qualitative characteristics of its products. What concept of marketing management is applied in this company?

- A. Product enhancement
- B. Production enhancement
- C. Modern marketing
- D. All the answers are correct
- E. All the answers are false

166. When a graduate becomes employed

on a certain position he should be first familiarized with his rights and duties. What document regulates rights and duties of pharmacy employees?

- A. Job description
- B. Internal employment policies and procedures
- C. Labour code
- D. All the answers are correct
- E. All the answers are false

167. In order to verify identity of tropan derivatives, Vitali's reaction is applied. For that purpose the medications should be first decomposed with nitric acid and then treated with alcoholic solution of potassium hydroxide and acetone. What effect will be observed?

- A. The solution will turn purple
- B. The solution will turn green
- C. Emission of gas bubbles
- D. Setting of black precipitate
- E. Setting of white precipitate

168. A patient suffering from epilepsy has taken Phenobarbital for a long time and developed drug tolerance. What is the mechanism of this phenomenon development?

- A. Acceleration of biotransformation
- B. Weakening of absorption
- C. Increase of receptor sensibility
- D. Inhibition of biotransformation
- E. Accumulation of the drug in the organism

169. According to the applicable legislation of Ukraine, prices for some drugs and medical products are subject to governmental regulation. What is the maximal trade markup established for the drugs that are purchased by public and municipal institutions using budgetary funds?

- A. 10% of manufacturer's wholesale price
- B. 15% of manufacturer's wholesale price
- C. 30% of manufacturer's wholesale price
- D. 35% of manufacturer's wholesale price
- E. 25% of manufacturer's wholesale price

170. A pharmacy sells drugs. What is the rate of value-added tax for drugs sold by a pharmacy?

- A. 0%
- B. 10%
- C. 20%
- D. 30%
- E. 25%

171. A pharmaceutical factory produces herbal juice out of fresh raw material. What operation should be performed at the stage of juice purification?

- A. Heating with following quenching
- B. Settling
- C. Adsorption
- D. Filtration
- E. Crystallization

172. A phytochemical department of a pharmaceutical factory produces valerian tincture of fresh material. Technological peculiarity of its production is that it should be produced on the base of:

- A. 70% ethanol with the ratio 1:5
- B. 70% ethanol with the ratio 1:10
- C. 90% ethanol with the ratio 1:5
- D. 90% ethanol with the ratio 1:10
- E. 95% ethanol with the ratio 1:10

173. A patient suffering from stomach ulcer was prescribed an antiulcer drug that also reduces secretion of hydrochloric acid and inhibits *Chelicobacter pylori*. What drug is it?

- A. Omeprazole
- B. Gastrocepine
- C. Maalox
- D. Famotidine
- E. Almagel

174. Quantitative determination of nitrofuril (furacilin) can be done by method of spectrophotometry. A pharmacy analyst can calculate quantity by measuring:

- A. Optical density
- B. Refractive index
- C. Rotation angle
- D. pH of solution
- E. Fusion temperature

175. Inventory in a pharmacy revealed a shortage within the range of natural loss. This shortage will be rated as expenses at the following price:

- A. Wholesale
- B. Retail
- C. Contract
- D. Procurement
- E. Negotiated

176. What substance will impede reaction of iodoform test aimed at detection of ethyl alcohol in the biological material?

- A. Acetone
- B. Methanol
- C. Isoamyl alcohol
- D. Phenol
- E. Formaldehyde

177. On the wage of pharmacy employees the personal income tax is levied. What pays **ARE NOT INCLUDED** into the total monthly income being subject to this kind of taxation?

- A. Maternity pay
- B. Sick leave benefit
- C. Dividends
- D. Sick care benefit
- E. Income in kind

178. Analgin substance was sent for analysis. What method allows to evaluate quantitative content of analgin?

- A. Iodometry
- B. Acidimetry
- C. Alkalimetry
- D. Chelatometry
- E. Permanganatometry

179. A pharmacist prepares internal drops with the following formulation: 5 ml of adoniside, 10 ml of valerian and lily-of-the-valley tincture each, 0,1 g of menthol, 2,0 g of potassium bromide. It will be efficient to dissolve potassium bromide in the following substance:

- A. In the adoniside
- B. In the lily-of-the-valley tincture
- C. In the valerian tincture
- D. In the mixture of tinctures
- E. Potassium bromide should be added into the selling vial last of all

180. A pharmacy technologist revealed incompatibility of a formulation:

*Rp.: Mentholi 0,5
Natrii hydrocarbonatis
Natrii tetraboratis aa 1,5
Aquae purificatae 100 ml
M.D.S. 1 tablespoon twice a day.*

What action should the pharmacist take in order to make this pharmaceutical form?

- A. Add stabilizer
- B. Perform fractional dissolution
- C. Substitute the solvent
- D. Substitute one of the components
- E. Change pharmaceutical form

181. A pharmacist is preparing vaginal suppositories by method of pouring. Which hydrophilic base can he use for this

purpose?

- A. Polyethylene oxide
- B. Cocoa butter
- C. Vitepsol
- D. Hard fat
- E. Butyrol

182. A patient with arterial hypertension was administered a non-prescription drug for symptomatic treatment of rhinitis. What pharmaceutical form should be recommended the patient in order to reduce as much as possible the likelihood of development of undesirable systemic vasoconstriction?

- A. Ointment
- B. Gel
- C. Drops
- D. Aerosol
- E. Tablets

183. A 56-year-old patient suffering from essential hypertension was prescribed an inhibitor of angiotensin converting enzyme (ACE) and a potassium-sparing diuretic. Such combination is:

- A. Unreasonable because it increases risk of hyperkalemia development
- B. Reasonable because it decreases risk of hyperkalemia development
- C. Reasonable because it potentiates hypotensive effect of ACE inhibitor
- D. Unreasonable because it reduces hypotensive effect of ACE inhibitor
- E. Unreasonable because it increases risk of orthostatic collapse development

184. Treatment course of essential hypertension includes diuretics. Which diuretic **DOES NOT NEED** to be combined with potassium preparations?

- A. Triamteren
- B. Clopamide
- C. Dichlothiazide
- D. Furosemide
- E. Ethacrynic acid

185. Restharrow (*Ononis*) root is used for production of a tincture for treating haemorrhoidal haemorrhages. Isoflavonoids can be identified in the raw material by means of:

- A. Chromatographic method
- B. Cyanidin test
- C. Hemolytic index
- D. Biological standardization
- E. Foam index test

186. Hawthorn flowers are used for production of cardiogenic drugs. During procurement of this crude drug the flowers of the following plant can appear in it:

- A. Blackthorn
- B. Buckthorn
- C. Bird cherry
- D. Brier
- E. Elder

187. A pharmacy store was supplied with 100 packs of a product listed as *Nitroglycerine*. With regard to its physicochemical properties this preparation should be rated among the following drug group?

- A. Explosive substances
- B. Explosion hazardous substances
- C. Highly inflammable substances
- D. Combustible substances
- E. Volatile substances

188. An edema can be relieved by means of hypertonic solutions. What phenomenon takes place in the blood cells after injection of such solution?

- A. Plasmolysis
- B. Hydrolysis
- C. Hemolysis
- D. Lipolysis
- E. Electrolysis

189. During an operation a dentist needs to reduce salivation in a patient. The dentist has to use a drug of the following pharmacological group:

- A. Muscarinic receptor blockers
- B. Muscarinic cholinomimetics
- C. Adrenomimetics
- D. Adrenoceptor blocker
- E. Muscarinic and nicotinic cholinomimetics

190. Product assortment is the whole set of product assortment groups offered by an enterprise. The index representing number of positions in each product assortment group is called:

- A. Product assortment depth
- B. Product assortment width
- C. Product assortment saturation
- D. Product assortment
- E. Assortment comparability

191. A pharmacy analyst of the laboratory at the National drug quality control inspection is conducting quantitative

determination of caffeine by method of acid-base titration in the anhydrous solvents according to the requirements of National Pharmacopeia of Ukraine. What titrated solution is to be used?

- A. Perchloric acid
- B. Sodium methylate
- C. Sodium hydroxide
- D. Sodium edetate
- E. Potassium bromate

192. Common juniper is applied as a diuretic, anti-inflammatory and cholagogic agent. This plant gives the following medicinal raw material:

- A. Fruits
- B. Sprouts
- C. Leaves
- D. Roots
- E. Seeds

193. Functioning of a pharmacy is realized on different levels of management. Function of direct control of employees fulfilling concrete tasks relates to the following level of management:

- A. Technical
- B. Institutional
- C. Managerial
- D. Administrative
- E. Bureaucratic

194. Pharmaceutical chemistry studies methods of drug synthesis. Interaction of anesthesin with beta-diethylaminoethanol in presence of sodium alcoholate with following acidation with hydrochloric acid results in origination of:

- A. Procaine hydrochloride
- B. Procainamide hydrochloride
- C. Tetracaine hydrochloride
- D. Xycain
- E. Trimecaine hydrochloride

195. After a sulfamide preparation was heated with salicylic acid in presence of concentrated sulfuric acid, it turned crimson. What drug is analyzed?

- A. Soluble streptocid
- B. Streptocid
- C. Sulfaguine
- D. Ethazol
- E. Phtalazol

196. A pharmacy procured common organum. What drying conditions should be applied for producing high quality crude drug?

- A. 35 – 40°C
- B. 80 – 90°C
- C. 60 – 70°C
- D. 50 – 60°C
- E. 70 – 80°C

197. A 67-year-old patient who undergoes treatment for bronchial asthma presents with limb tremor, headache, insomnia, extrasystole. What drug might have caused such symptoms?

- A. Theophylline
- B. Prednisolone
- C. Tavegyl
- D. Intal
- E. Acetylcysteine

198. For accounting business transactions carried out in a pharmacy the synthetic accounts are used. Their list is given in the Chart of Accounts. Balances of the I, II and III account classes are used for completion of the following document:

- A. Assets
- B. Profit and Loss Account
- C. Liabilities
- D. First section of the liabilities balance sheet
- E. Fourth section of the liabilities balance sheet

199. A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drugs of which pharmacological group should be administered for bronchospasm elimination?

- A. Muscarinic receptor blockers
- B. Beta-adrenoceptor blockers
- C. Muscarinic cholinomimetics
- D. Anticholinesterase drugs
- E. Muscle relaxants

200. A patient who has taken phenobarbital for a long time was prescribed diclofenac sodium. However the anti-inflammatory effect of diclofenac appeared to be less than expected due to the pharmacokinetic interaction of these drugs. Such interaction might be the result of the following processes:

- A. Accelerated drug metabolism in liver
- B. Decelerated drug metabolism in liver
- C. Reduced protein concentration in plasma
- D. Change of receptor sensibility
- E. Increased drug dosage